

INDUSTRIAL ZONING STUDY



City Plan Commission

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*Suite 103, City Hall,
 Providence 3, Rhode Island*

November 8, 1955

The Honorable City Council
 of the City of Providence
 City Hall
 Providence, Rhode Island

Gentlemen:

In accordance with the provisions of Chapter 8, Section 5 of the Revised Ordinances of 1946 and of Resolution 592 approved November 18, 1954 requesting the City Plan Commission "to make a study of the desirability of increasing the amount of land presently zoned for Industrial use and to report back to the City Council those areas of the city which might well be rezoned for such Industrial uses", the Commission respectfully submits the following report which was approved by the Commission on November 8, 1955 after nearly a year of study by the staff and Commission.

In brief, the Commission is of the opinion that, with two possible exceptions, there are no areas of the City of Providence which can appropriately be rezoned for industry at this time. This conclusion is based in large part on the problems that would be created by such rezoning, especially in connection with family relocation and the cost and difficulty of assembling adequate industrial sites except through the redevelopment procedure. This procedure is, of course, being followed in the West River Industrial Park Project on which definite operation is expected to start within a few months.

The two exceptions include areas of 50 and 25 acres respectively which the Commission strongly believes would require a unified planned development including land assembly, removal of nonindustrial structures, regrading, replatting and the provision of rail facilities. Detailed analyses of eleven possible sites for rezoning are included in the Appendix of this Report. It is believed that the study involved in this Report underscores the accuracy of the new Zoning Ordinance which was enacted by the City Council and approved by His Honor the Mayor in September, 1951.

The Commission wishes to express its appreciation of cooperation from other city agencies in the preparation of this Report.

IN CITY COUNCIL

JAN 5 - 1956

READ:
 WHEREUPON IT IS ORDERED THAT
 THE SAME BE RECEIVED.

EW:MMH

D. Everett Whelan
 CLERK

Very truly yours,

Edward Winsor
 EDWARD WINSOR
 CHAIRMAN
 CITY PLAN COMMISSION

THE CITY PLAN COMMISSION

Edward Winsor, Chairman

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** Thomas B. Marston, Jr., transferred to the Providence Redevelopment Agency March 27, 1955

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INDUSTRIAL ZONING STUDY

I. DESIRABILITY OF INCREASING THE AMOUNT OF AREA ZONED FOR INDUSTRIAL USE

A. IMPORTANCE OF INDUSTRY TO PROVIDENCE

The principal benefits of industry to a city may be measured generally in terms of employment provided, size of payrolls, and amount of local tax payments. Generally, the principal costs of industry to a city may be measured in terms of the direct costs of providing municipal services. In addition, the city may incur direct costs in making industrial sites available (redevelopment, for example); and if some industries are obnoxious in any respect, the city may incur indirect costs resulting from the deterioration and devaluation of areas adjacent to those industries.

1. Employment and Payrolls ----- Industrial employment is a prime factor in the economic base of Providence. One major industrial use, manufacturing, accounts for 51 percent of the total employment in Providence,* for 49 percent of the total payroll,* and 39 percent of the jobs held by Providence residents.# In the state as a whole, manufacturing accounts for 57 percent of the total employment.* Since manufacturing is the most basic source of employment in Providence and Rhode Island, the level of employment and payrolls in most non-manufacturing businesses in Providence is heavily dependent upon the level of manufacturing employment and payrolls.

2. Tax Base ----- Industrial uses do not necessarily contribute more than enough tax revenue to a city to make up for the cost of servicing them. Much depends upon the specific kind of industry, its location, and the other uses that might be made of the

* Source: Rhode Island Department of Employment Security and Rhode Island Development Council, 1954.

Source: U. S. Census of Population, 1950.

land it occupies. Many industries do contribute more than enough to pay the cost of servicing them, and the indications are that more industrial uses in properly-located, substantial buildings would be valuable additions to the tax base of Providence.

B. THE NEED FOR MORE INDUSTRY IN PROVIDENCE

In recent years, Providence has experienced a serious decline in employment, and it is now faced with a loss in tax base as commercial and industrial buildings are demolished in the course of freeway construction. Between December, 1952 and November, 1954, total employment in Providence declined from 128,100* to 118,100,* a decrease of 10,000 or 7.8 percent, and total manufacturing employment declined from 66,100* to 59,900,* a decrease of 6,200 or 9.4 percent. During this same period, manufacturing employment in the state as a whole declined from 148,500* to 132,000,* a decrease of 16,500 or 11 percent. Between November, 1954 and September, 1955, manufacturing employment in the state as a whole increased by 1,400.# Comparable data for the City of Providence is not yet available.

To a large extent, the decline in manufacturing employment in Providence has occurred in plants which have continued to operate at a reduced level of employment, but much of the decrease, particularly in textiles, has also resulted from the actual closing of plants.

According to the State Development Council, a total of 1,000,000 square feet of floor space is presently available for industrial occupancy in Providence, mostly in old, large, multi-storied buildings. Space in a portion of one of these old buildings may suit

* Source: Rhode Island Department of Employment Security and Rhode Island Development Council.

Source: Rhode Island Department of Labor.

temporarily the requirements of a small firm with meager financial resources, but among the more substantial industrial firms there is a definite trend in favor of modern, attractive, one-story buildings. The trend also favors larger sites that allow ample room for off-street parking and loading and locations that are free from congestion.

The suburbs of Providence contain many examples of modern industrial plants, and since Providence is the primary commercial center of the metropolitan area, the employment provided by suburban industrial plants is generally beneficial to Providence. With respect to employment alone, the location of new plants in the immediate suburbs might be fully as beneficial to Providence as the location of plants within the central city. With respect to the property tax base, however, the suburban plants would not directly benefit Providence, and in view of the considerable number of commercial and industrial structures in Providence that are scheduled to be demolished in the course of freeway construction during the next few years, the tax base would seem to be an important consideration.

If Providence wishes to obtain more jobs to offset recent declines in employment and at the same time wishes to strengthen its tax base, it should consider seriously means for obtaining additional modern industrial plants.

C. KINDS OF INDUSTRIES THAT PROVIDENCE COULD EXPECT TO ATTRACT

Some of the factors that were once so influential in attracting industries to Providence have become much less important in recent years. Widespread ownership of automobiles has increased the mobility of labor and lessened dependence on mass transit in getting workers to and from their jobs. The development of truck transportation has lessened dependence on railroad freight service. Modern, fire-resistant construction and the use of sprinkler systems have, for some in-

dustries, lessened dependence upon a well-equipped, professional fire department. As a result, industry now has much more freedom than it had 50 years ago in selecting plant locations elsewhere in the metropolitan area. The inadequacy of available sites and the growth of congestion in Providence have encouraged industry to exercise that freedom.

Nevertheless, Providence still has definite advantages as a location for certain kinds of industries. Generally, these industries may be classified as follows:

1. Industries with large numbers of employees using mass transit facilities in going to and from work. This applies particularly to industries employing large numbers of female workers as, for example, jewelry manufacturing.

2. Industries that manufacture primarily for the local market and wish to locate near the transportation center of the metropolitan area as, for example, food manufacturing.

3. Distributors, warehouses, and trucking terminals, which tend to locate near the junction of important regional transportation routes as well as near the transportation center of the metropolitan area.

As the freeway system is completed and traffic congestion is alleviated, Providence should become more attractive as a location for industry. The amount of new industry that it can obtain, however, will depend largely upon the amount of adequate sites that are made available.

D. PRESENT SUPPLY OF INDUSTRIAL LAND IN PROVIDENCE

According to the 1953 land use survey, 1,644 acres, or 17.2 percent of the total land use area* of Providence, were in industrial

* Exclusive of streets.

use# and 1,883 acres, or 19.7 percent of the total use area, were zoned for industry in the year 1953. Of the total area in industrial use, 85 percent was in industrial zones. Of the total area in industrial zones, 1,397 acres, or 72 percent, were occupied by industrial uses.# The remaining 537 acres in industrial zones were used as follows:

<u>Use</u>	<u>Area</u>	<u>Percent</u>
Public and Institutional	51 acres	(3%)
Commercial	62 acres	(3%)
Residential	163 acres	(8%)
Vacant	261 acres	(14%)

Superficially a vacant area of 261 acres would seem to be enough for a considerable expansion of industry. A large portion of this area, however, is not, in its present condition, suitable for industry. Approximately 125 acres of the total are covered by water. Some of the remaining acreage is handicapped by factors such as inadequate drainage, rugged topography, unsuitable foundation conditions, and inadequate street access; some of it cannot be purchased at a reasonable price; some of it (42 acres) lies in the paths of proposed expressways; and some of it consists of parcels individually too small in size.

In 1953 approximately 80 acres of industrially-zoned land were in predominantly vacant sites of $\frac{1}{4}$ acre or larger. Of these 80 acres, 30 acres are in locations that might be included in rights-of-way for proposed expressways. An additional $4\frac{1}{2}$ acres are on slopes too steep for building. One acre is inaccessible and one acre is in the location of a proposed hurricane flood barrier. The remaining

Including railroads and public utilities. In 1953 railroads and public utilities occupied 399 acres, 317 acres of which were in industrial zones.

43½ acres do not necessarily represent prime industrial sites. Some of this remaining acreage is subject to other limitations mentioned in the preceding paragraph.

While the amount of vacant, industrially-zoned area in the City of Providence is considerable, there actually appears to be a scarcity of such area that is presently suitable for industrial occupancy. Furthermore, unless counter measures are taken, this scarcity will probably be aggravated in the next few years by the construction of expressways, whose rights-of-way will include, in part, land now used by industry as well as land now vacant and zoned for industry.

Actually, counter measures are already being undertaken. The proposed West River Industrial Park, a slum clearance and redevelopment project, now in the planning stage, will provide approximately 50 acres of vacant industrial sites in a prime location.

Primarily it is vacant land that is sought by industries desiring to construct new buildings. The cost of purchasing and demolishing existing structures is an important deterrent to the acquisitions of developed land. With respect to land in commercial use, the cost of the land itself is a deterrent, since commercial land generally is considerably more valuable than industrial land. Public and institutional uses, because of the valuable functions they perform, are generally not for sale. The acquisition for industrial sites of land too frequently involves the difficult task of assembling numerous small parcels held in numerous different ownerships. As an alternative to this procedure, it is much simpler for firms to seek sites in the suburbs, where they may find large tracts of undeveloped land in single ownerships.

Because of a general revision of the zoning map in 1951, it is not possible to contrast all of the area of residential use in in-

dustrial zones in 1946 with similar data for 1953. However, in six areas of the city which were zoned for industry in both 1946 and 1953, it was found that there were 72.4 acres of residential use in 1946 and 67.7 acres in 1953. This represents a decline of only 4.7 acres in a period of 7 years. Because of a change in the definition of industrial use between 1946 and 1953, it is not entirely clear how much of these 4.7 acres was put into industrial use. Nevertheless, it seems apparent that industrially-zoned land in residential use has not recently been an important source of land for industrial sites.

E. MEANS FOR INCREASING THE SUPPLY OF LAND AVAILABLE FOR INDUSTRIAL USE

The principal means for increasing the supply of industrial land may be divided into two broad categories: rezoning and site development.

1. Rezoning ----- This has been a common device used by communities seeking to make available more land for industry.

a) Cost ----- The zoning of additional area for industry would involve no direct cost to the city. If done without due regard to its possible effects on surrounding property, however, it might well cause a deterioration and devaluation of the surrounding property and a resulting indirect cost to the city.

b) Effectiveness ----- As a means for making more land available for industrial use, zoning has its greatest effectiveness in areas characterized by favorable physical conditions, by good access and by relatively large blocks of undeveloped land in single ownerships. In areas with less favorable physical conditions or with a greater multiplicity of property owners, the effectiveness of zoning, in this regard, is diminished. In areas highly developed with commercial or residential uses, the effectiveness of zoning as a

means of making available more land for industry is extremely doubtful. The zoning of an area for industry does not guaranty that the area will be used industrially.

2. Site Development ----- A policy of site development may be followed within the existing zoning framework or it may be followed in conjunction with the zoning of additional area for industry.

a) Procedures ----- Site development may involve a few or many of such procedures as:

- (1) Acquisition and assembly into a few large parcels under one ownership of land that is presently broken up into numerous small parcels.
- (2) Grading of areas of rugged topography.
- (3) Improvement of storm drainage.
- (4) Clearance of nonindustrial structures from site.
- (5) Filling of areas presently under water.
- (6) Provision or improvement of rail and street access.
- (7) Provision of sewers and utilities.

b) Principal Areas Where Site Development Might be Undertaken

(1) Deteriorated Districts ----- The Providence Redevelopment Agency is empowered to acquire, clear, improve, and dispose of areas that are predominantly residential in use and substandard in housing quality. In 1953, there were 163 acres of residential land use in industrial zones, most of which could probably qualify for redevelopment. There is an additional acreage of such residential use which, although not presently located in industrial zones, might be redeveloped for industrial uses if the zoning were changed.

(2) Arrested Districts ----- A recent amendment to

the state constitution authorizes local redevelopment agencies to acquire and redevelop land in arrested districts. Although only a few acres in arrested districts are presently zoned for industry, it is quite possible that many more acres could be zoned for industry during the process of redevelopment.

(3) Areas Now Covered by Water ----- In 1953 there were approximately 125 acres of industrially-zoned area covered by water, mostly along the harbor. Some of this area is city-owned and some privately-owned. Most of the water-covered area is in lots of several acres in size. It might be possible for the city and the private owners to reach an agreement with respect to the filling of this area in such a manner as to make it available for industrial use.

c) Cost of Site Development ----- The cost of site development as a means of making more land available for industry may vary considerably from one area to another. An important factor in redevelopment projects is the ability to obtain federal grants covering 2/3 of the net cost.

d) Effectiveness of Site Development ----- There is no more effective way of making additional land available to industry than through the provision of improved sites in sufficiently large parcels. Through the process of site development, many acres of land presently lying in industrial zones but not presently being used by industry could be made available for such use.

e) Example of Site Development ----- The proposed West River Industrial Park, a slum clearance and redevelopment project, will provide an example of what site development can do. This project will not only clear many acres of slum housing, but will also provide 50 acres of vacant, industrially-zoned land in a prime loca-

tion for industry.

II. SPECIFIC AREAS THAT MIGHT BE REZONED TO PERMIT INDUSTRIAL USES

In an attempt to determine what, if any, specific areas of the city might properly be rezoned to permit industrial uses, a study has been made of the principal concentrations of vacant land not presently in industrial zones. The study was confined to areas of predominantly vacant land because, as previously noted, private enterprise is likely to encounter great difficulty in attempting to assemble and develop for industrial purposes land that is presently in residential, commercial, public or institutional uses.

In examining the principal concentrations of vacant land and considering such factors as access, physical conditions, and relationship to adjacent residential uses, it became apparent that only eleven areas merited a detailed examination.

A brief description and analysis of each of the eleven study areas may be found in the appendix.

As a result of the detailed examination, there were found to be only two portions of one study area that could be recommended for rezoning at the present time. One is a $7\frac{1}{2}$ -acre tract situated immediately to the southwest of the proposed Branch Avenue - Louisquisset Pike Interchange. The other is a $6\frac{1}{2}$ -acre tract situated immediately north of the proposed extension of Silver Spring Street, west of an existing M-1 zone fronting on Charles Street and east of the proposed Louisquisset Pike extension.

No rezoning at the present time can be recommended in any of the other study areas for one or more of the following reasons:

1. Presence of a number of dwellings that would be adversely affected unless removed.
2. Possible detrimental effects on surrounding properties.

3. Adverse physical conditions.
4. A pattern of diverse property ownership likely to dissuade private developers from assembling land into parcels of a size suitable for industrial use.
5. Possible stimulation of development that would interfere with the carrying out of proposed capital improvement projects.

In two study areas, there would be no objection to rezoning for industrial use provided that the rezoning were accompanied by a unified and planned redevelopment of the areas. Such a redevelopment would include the assembly of land, the removal of nonindustrial structures, the regrading of existing topography, the replatting of streets, and the provision of rail and other facilities. These two areas are:

Study Area 1, an area of approximately 50 acres situated south of the Woonasquatucket River between Killingly Street and Glenbridge Avenue.

Study Area 6, an area of approximately 25 acres situated north of Cemetery Street between Nashua Street and the Moshassuck River.

While it is strongly felt that the highest and best re-use for land on the western side of Mashapaug Pond would be residential, Study Areas 9 and 10 in this vicinity might also be considered for industrial rezoning if both were included within a redevelopment project extending from Niantic Avenue to Mashapaug Pond and from Study Area 9 north to the railroad. The diversity of property ownership and the presence of a large number of residential structures in this

area make it unlikely that the redevelopment could be accomplished by private developers.

A P P E N D I X

Industrial Rezoning Study Areas

Area 1
50 acres

Boundaries: From Killingly Street east along the City Line to Woonasquatucket River; southeast along Woonasquatucket River to Glenbridge Avenue; south along Glenbridge Avenue to proposed Western Expressway; west on Western Expressway to Killingly; north on Killingly to City Line.

Land Use: This area is largely in an arrested state of development. Approximately 8 acres are occupied by the state-owned Woonasquatucket Reservation, 5 acres by industrial uses, 4 acres by residential use, 23 acres by vacant land and 10 acres by platted streets.

Streets: The area contains 11,200 linear feet of platted streets, of which only 2,900 feet are open to traffic and only 800 feet paved. The prevailing right-of-way width is 40 feet.

Zoning: Except for a small M-1 zone occupied by a gravel pit on the north-central edge of the area, the entire area is zoned for R-1 use.

Physical Conditions: Physically, the eastern half of the area is characterized by a deep ravine in the extreme eastern section along Glenbridge Avenue and, immediately to the west of the ravine, a commanding, steeply-sloped gravel hill. With the exception of a strip of well-drained land along Killingly Street, the western half of the study area is generally marshy.

Property Ownership: Property in Study Area 1 is in 37 different ownerships. The State of Rhode Island owns 8 acres (Woonasquatucket Reservation); the City of Providence has tax title to 4 acres; 3 different private ownerships account for a total of 15 acres; and the remaining 13 acres (exclusive of streets) are in 32 different private ownerships.

Highway Access: The principal streets in the vicinity of Study Area 1 are Killingly Street and Glenbridge and Hartford Avenues. Hartford Avenue presently carries Route 6 traffic, and Killingly and Glenbridge are important feeder streets. All 3, however, are quite narrow and it is doubtful whether they could provide adequate access to a 50-acre industrial development. The proposed Western Expressway, when completed, will provide excellent access to the area.

Rail Access: The nearest railroad is the Pascoag Branch of the New Haven lying immediately across the Woonasquatucket River from Study Area 1. The extension of a rail spur into the area would necessitate the con-

struction of a bridge across the river and considerable grading within the area.

Relationship to adjoining territory: All of the territory immediately adjacent to Study Area 1, both in Providence and Johnston, is zoned for residential use. Along the north, east, and west boundaries the land is predominantly vacant, the only substantial amount of residential use being on the south boundary.

Conclusions:

- A. Since no buffer presently exists along the southern boundary of Study Area 1, a rezoning of the area to permit industrial use probably would have detrimental effects upon the residential uses immediately to the south of the study area.
- B. The poor highway access presently available would be a hinderance to industrial development in Study Area 1.
- C. Study Area 1, in its present condition, is not physically suitable for any substantial amount of industrial development. Making it suitable would require extensive grading.
- D. The existing pattern of property ownership, the great diversity of ownership, and the existence of tax title property, to which clear title probably could not be obtained without lengthy court procedure, are factors that likely would dissuade any private developer from attempting to assemble and redevelop Study Area 1 for industry.
- E. The proper regrading of the area, the removal of residential structures, the replatting of streets and property lines, and the efficient disposal of property would be extremely difficult without the assembly of land into a single ownership.
- F. In view of the preceding conclusions, it cannot be recommended that Study Area 1 be rezoned for industrial use at the present time.
- G. The proposed Western Expressway, when completed, would probably serve as an adequate buffer between residential uses on one side and industrial uses on the other. It would also provide excellent access to a large industrial development in Study Area 1. It is felt that, on completion of this expressway, Study Area 1 would be an excellent location for a planned industrial district.
- H. While an unqualified recommendation for industrial rezoning cannot be made, it appears that such rezoning would be desirable on completion of the Western

Expressway providing that the rezoning is accompanied by unified and planned development of the area.

- I. In view of the probable difficulties in land assembly previously noted, it appears that a proper development of the area could be accomplished only by the Providence Redevelopment Agency, which has the power of condemnation.
- J. A much better development of the area could be accomplished if the efforts of Providence were combined with the efforts of Johnston to develop not only 50 acres of land within Study Area 1 but also, and concurrently, the 50 to 60 acres of similar land lying immediately to the north of Study Area 1.

Area 2
21 acres

Boundaries: Study Area 2 is bounded on the south by the channel of the Woonasquatucket River. On the west, north and east, it is bounded generally by the rear lines of lots fronting on the south side of Manton Avenue. One lot fronting on Manton Avenue where it crosses the river is included within this study area, and several city-owned lots fronting on the south side of Manton between Chalkstone Avenue and Manton Court are included.

Land Use: Approximately 6 acres are vacant; 14 acres are covered by water; $\frac{1}{2}$ acre is in commercial use and $\frac{1}{3}$ acre is in mixed residential-nonresidential use.

Zoning: Except for $\frac{1}{3}$ acre zoned C-4, all of Study Area 2 is presently zoned R-2.

Physical Conditions: Study Area 2 is composed principally of pond and marsh at an elevation that is 15 to 25 feet below the elevation of Manton Avenue. Along the northern edge of the study area, the elevation changes abruptly. In a strip of land that is 50 to 100 feet in width, the terrain slopes downward from Manton Avenue at gradients in excess of 20 percent. Subsurface conditions are unknown.

Property Ownership: Property is in 5 ownerships.

Highway Access: Local highway access is provided by Manton Avenue and Chalkstone Avenue, both of which are narrow and congested streets. The nearest through state highway route is Route 6, approximately one mile away via Manton and Glenbridge Avenues.

Rail Access: There is no rail access at present. A branch of the New Haven Railroad lies immediately across the river, and a spur could probably be run from this line if a bridge over the river were constructed.

Relationship to Adjoining Territory: Land along the south side of Manton between Chalkstone Avenue and the Woonasquatucket River is zoned largely for C-4 use. All other land adjoining the study area, both in Johnston and Providence, is zoned for 2-family use. Land use on the south side of Manton between the river and Chalkstone Avenue is mixed residential and commercial; land use on the north side of Manton between Chalkstone Avenue and Manton Court is generally residential; and land on the south side of Manton east of Manton Court is vacant. Immediately across the river in Johnston is a branch line of the New Haven Railroad. Beyond the railroad, the land rises steeply. The slope itself is vacant, but atop the slope, on a plateau approximately 40 feet above the river is an area of residential use.

Capital Improvements: For several years, the City Plan Commission has been considering Study Area 2 as a site for a much needed recreational facility.

Conclusions: With the provision of a buffer strip along its boundaries, Study Area 2 could probably be developed for industrial use without seriously affecting surrounding property.

Physically, the area is not presently suitable for industrial use. The feasibility of making it suitable depends upon two factors, about which adequate information is not presently available. These factors are:

1. The cost of filling Dyerville Pond.
2. The suitability of foundation conditions. Until satisfactory information about these factors can be obtained and until the Plan Commission has made a decision concerning the proposed recreational facility in the area, no recommendation for industrial zoning can be made.

Area 3
24 acres

Boundaries: From City Line southeast along Woodward Road to Veazie Street; south along Veazie Street to Beulah Street; west along zoning boundary to City Line; northeast along City Line to Woodward Road.

This triangular tract of land is, except for one residence, entirely vacant. It is a wooded area and slopes upward from south to north at a gradient averaging approximately $12\frac{1}{2}$ percent. On the field trip to Study Area 3, it was discovered that there were numerous outcrops of rock ledges. At the crest of the slope in North Providence is an abandoned quarry.

Conclusion: In view of the relatively steep slopes and the rock outcrops contained in this area, it appears unlikely that the area can be developed economically for industrial use. Therefore no rezoning can be recommended.

Area 4
10 acres

Boundaries: From Veazie Street east along Beulah Street to Woodward Road; from the intersection of Beulah and Woodward south along the rear of lots facing on Woodward to the north shore of Wanskuck Pond; west and south along the edge of Wanskuck Pond to West River; west along West River to Veazie Street; north along Veazie Street to Beulah Street.

Land Use: Entirely vacant.

Ownership: The entire tract is in a single ownership.

Physical Conditions: Study Area 4 is mostly a level plateau situated approximately 10 feet above the elevation of Veazie Street. There is a steep slope along Veazie Street and another steep slope along the north edge of Wanskuck Pond.

Zoning: Present zoning is R-2.

Rail Access: There is no present rail access, and the provision of such does not appear feasible.

Highway Access: Via Veazie Street and Branch Avenue, Study Area 4 is approximately a half mile from an interchange on the proposed Louisquisset Pike extension.

Relationship to Adjoining Territory: To the west of Study Area 4, across Veazie Street, is a tract of land, zoned M-1, that is presently being developed as a storage yard and maintenance shop for construction equipment. To the north, across Beulah Street, is Roger Williams Baptist Church. To the east are well-maintained residences fronting on Woodward Road. To the south is Wanskuck Pond.

Conclusion: After an examination in the field it was felt that the industrial development of Study Area 4 would be likely to have detrimental effects upon the adjacent residential uses and upon Roger Williams Baptist Church. The best possible use of the area would seem to be residential. Accordingly, a rezoning for industrial use cannot be recommended.

Area 5
61 acres

Boundaries: From Vandewater Street, southeast along Branch Avenue and along rear lines of residential lots fronting on Branch Avenue to Metcalf Field; southeast along former shoreline of Leonard's Pond to Charles Street; south on Charles Street to Silver Spring Street; southwest along proposed extension of Silver Spring Street to Salina Street; northwest along Salina Street to Suffolk Street; northeast along Suffolk Street to Cornwall Street; northwest along Cornwall Street and along boundary of Corliss Park to Vandewater Street; northeast along Vandewater Street to Branch Avenue.

Capital Improvements: Several proposed capital improvements will directly affect Study Area 5. These are:

- A. An expansion of Metcalf Field.
- B. An extension of Silver Spring Street to connect with Chad Brown Street.
- C. The Louisquisset Pike Expressway.

Following the completion of these improvements plus the relocation of a high voltage electric line from the route of Louisquisset Pike, there will remain in Study Area 5 approximately $18\frac{1}{2}$ acres of vacant land not presently zoned for industry.

The three principal remnants have been designated as Sub-area 5-A, 5-B and 5-C.

Sub-area 5-A
 $7\frac{1}{2}$ acres

Boundaries: Branch Avenue on the north; proposed Louisquisset Expressway on the east; Corliss Park on the south; and an existing M-1 zone on the west.

Land Use: Approximately one acre in the northwest corner is used as a parking lot. The remaining $6\frac{1}{2}$ acres are vacant.

Zoning: The present zoning is R-3.

Physical Conditions: Except for the portion used as a parking lot, this sub-area is a marsh. West River, which flows across the southern part of the area, was once ponded in this location. The pond, known as Box Pond, was drained a few years ago. Subsurface conditions in this area are generally unfavorable for foundations. A test hole drilled near the Hawkins Street bridge about 1890 revealed a 51-foot layer of quicksand extending from 8 feet below the surface to 59 feet below the surface.

Property Ownership: The entire tract is in a single ownership.

Highway Access: The completion of the Louisquisset Expressway, which will have an interchange with Branch

Avenue, should provide the area with excellent highway access.

Rail Access: The provision of a rail spur to this area does not appear to be feasible.

Relationship to Adjoining Territory: An M-1 Zone borders the study area on the west. All other adjoining territory is in R-3 zoning. Except for a few scattered residences across Branch Avenue, all of the territory bordering the study area is vacant, Corliss Park being a park only in name. The freeway will eliminate the adjoining residential uses.

Conclusion: Sub-area 5-A could probably be rezoned for industrial use without detriment to adjoining territory. Because of the unfavorable subsoil conditions, however, it is doubtful that any substantial industrial buildings can be constructed in the area.

Sub-area 5-B
4½ acres

Boundaries: On the northeast, rear lines of lots fronting on Branch Avenue; on the south, Hawkins Street; on the west, the proposed Louisquisset Expressway.

Land Use: The entire area is vacant.

Zoning: An area of 0.2 acre in the southeast corner is zoned C-4. The remainder of the area is zoned R-3.

Physical Conditions: The entire area is a marsh. Part of the area was once covered by Box Pond. Subsoil conditions are generally unsuitable for foundations. A test hole drilled just across Hawkins Street revealed a 51-foot layer of quicksand extending from 8 feet below the surface to 59 feet below the surface.

Property Ownership: The entire tract is in one ownership.

Highway Access: The completion of the proposed Louisquisset Expressway will provide excellent highway access.

Rail Access: The provision of rail service does not appear feasible.

Relationship to Adjoining Territory: Property bordering the area on the northeast is zoned C-4 and is primarily in residential and commercial use. All other adjoining territory is in R-3 zoning and is vacant.

Conclusion: Because of the unstable foundation conditions in the area, it is not likely that any substantial buildings will be erected there. It is likely that if industrial uses did develop in the area, they would be detrimental to adjoining residential uses. Therefore,

it cannot be recommended that the area be rezoned for industrial use.

Sub-area 5-C
6½ acres

Boundaries: Metcalf Field, and a westward extension thereof, on the north; Charles Street and an existing M-1 zone on the east; the proposed extension of Silver Spring Street on the south; and the proposed Louisquisset Expressway and proposed relocation of the electric transmission line on the west.

Land Use: The entire area is vacant.

Zoning: Approximately 0.3 acre is zoned C-2. The remainder is zoned R-3.

Physical Conditions: Part of the area was covered by Leonard's Pond until the pond was drained a few years ago. Generally, the land is low-lying and would probably have to be filled several feet before it could be put to use. A test hole drilled about 1890 at Charles Street north of Lombardi Street revealed a 14-foot layer of quicksand extending from 30 feet below the surface to 44 feet below the surface.

Property Ownership: The entire area is in one ownership.

Highway Access: Part of the area fronts on Charles Street. Via Charles Street and Branch Avenue the proposed Louisquisset Expressway interchange with Branch Avenue is approximately 3,500 feet from sub-area 5-C. Via Charles Street, the proposed Louisquisset Expressway interchange at the Charles Street-Admiral Street intersection is approximately 2,000 feet away.

Rail Access: The provision of a rail spur does not appear to be feasible.

Relationship to Adjoining Territory: Property directly across Charles Street, north of Lombardi Street, is predominantly in residential use. Nearly all of the other adjoining property is vacant. Metcalf Field, which is used as a playground for Esek Hopkins School, adjoins sub-area 5-C for a distance of approximately 60 feet on the north.

Conclusions: The development of industrial uses to the north of the existing M-1 zone would likely be detrimental to existing residential uses on the east side of Charles Street. For this reason no rezoning for industrial use north of the existing M-1 zone can be recommended. The development of industrial uses to the west and south of the existing M-1 zone is not likely to be detrimental to adjoining uses. By extending the existing M-1 zone westward to the proposed Louisquisset Expressway right-of-way and southward to the proposed Silver Spring Street extension, an additional 3 acres

may be added to the industrially-zoned area. While there is no objection to this from the zoning standpoint, it is questionable whether or not the foundation conditions in the area are suitable for substantial industrial buildings.

Area 6
25 acres

Boundaries: From the Moshassuck River, east along south boundary of drive-in theater to Powell Street; south and southeast along Powell Street to Nashua Street; south along Nashua Street to Cemetery Street; northwest along Cemetery Street to Moshassuck River; north along Moshassuck River to drive-in theater.

Land Use: Study Area 6 is part of a district designated by the 1946 MASTER PLAN FOR REDEVELOPMENT OF RESIDENTIAL AREAS as Arrested District A-9. Approximately 11 acres of Study Area 6 are vacant.* The rest is occupied approximately as follows: $5\frac{1}{2}$ acres by residential uses, one-half acre by commercial uses, one acre by an industrial use, 3 acres by a playground and 4 acres by platted streets.

Streets: This area contains 3,440 linear feet of platted streets, of which 2,080 linear feet are open to traffic and 1,200 linear feet are paved. Streets platted but not open comprise 1,360 linear feet. The prevailing right-of-way width of streets in Study Area 6 is 50 feet.

Zoning: The block bounded by Concord Street, Matilda Street, Nashua Street and Cemetery Street is zoned for C-4 use. The remainder of Study Area 6 is zoned for R-3 use.

Physical Conditions: The highest elevations in Study Area 6 are along its eastern boundary, Nashua Street. West of Nashua Street, the terrain slopes downward along a bluff at gradients ranging from approximately 10 percent to more than 60 percent. Concord Street, at the base of the bluff, is, at one point, 45 feet below the elevation of Nashua Street. From the base of the bluff westward to the Moshassuck River, the terrain is level.

Property Ownership: The Collyer Street Playground, with an area of $7\frac{1}{2}$ acres, is owned by the City of Providence. The remaining $13\frac{1}{2}$ acres (exclusive of streets) in Study Area 6 is in 43 different private ownerships.

Highway Access: The eastern edge of Study Area 6 is approximately 250 feet from North Main Street. The western edge is approximately 600 feet from the proposed North-South Freeway interchange at Smithfield Avenue, and the proposed connector between this interchange and North Main Street will traverse the study area.

Rail Access: Study Area 6 has no rail access at present. Physically, the provision of a rail line appears feasible. The main line of the New Haven Railroad is ap-

* Including the undeveloped portion of Collyer Street Playground.

proximately 1,000 feet from the western edge of the study area. Whether or not the provision of a rail spur is economically justifiable will have to be determined by a more detailed study.

Relationship to Adjoining Territory: Adjacent land to the north and west of Study Area 6 is zoned for M-1 use; adjacent land to the east is zoned for C-4 use; and adjacent land to the south is zoned for R-3 use. On the northern boundary there is a drive-in theater, and on the southern boundary a cemetery. Land along the eastern boundary contains a mixture of commercial, industrial, and residential uses; and land along the western boundary is partly vacant and partly in industrial use.

Conclusions:

- A. A rezoning of this study area to permit industrial use, if not accompanied by a clearance of the residential structures in the area, would be likely to have adverse effects upon those structures.
- B. The existing pattern of property ownership and the diversity of ownership would probably dissuade any private developer from assembling the property, removing the nonindustrial structures, replatting the streets, and redeveloping the area for industrial use.
- C. A rezoning of the area for industrial use at the present time might stimulate development that would interfere with proposed freeway access roads.
- D. In view of the preceding conclusions, it cannot be recommended that Study Area 6 be rezoned to permit industrial use at the present time.
- E. While an unqualified recommendation for industrial use cannot be made, it does appear that such rezoning would be desirable providing that the rezoning is accompanied by a unified and planned development of the area without interference with proposed freeway access roads.
- F. In view of the probable difficulties in land assembly previously noted, it appears that a proper development of the area could be accomplished only by the Providence Redevelopment Agency, which has the power of condemnation.

Area 7
5 acres

Boundaries: From Woodmont, southeast along Narragansett Avenue to a point midway between Robert Street and Santiago Street; west along rear lines of lots fronting on Santiago Street to Alexander Street; north along Alexander Street and northeast along rear lines of lots fronting on Louis Street to Woodmont Street; southeast along Woodmont Street to Narragansett Avenue.

Land Use: Approximately $3\frac{1}{2}$ acres are vacant; slightly more than one acre is in platted streets; and approximately 0.2 acre is used for parking.

Streets: Included within Study Area 7 are 800 linear feet of platted streets, of which 240 feet are paved. The remaining 560 feet are not open to traffic.

Zoning: The entire area is presently zoned R-2.

Physical Conditions: Study Area 7 slopes upward from Narragansett Avenue at a gradient averaging approximately 4 percent.

Property Ownership: Property is in 5 ownerships.

Highway Access: Study Area 7 is located approximately 1,200 feet from Reservoir Avenue via Narragansett Avenue and approximately 1,300 feet from Elmwood Avenue via Narragansett and Roger Williams Avenues. The proposed North-South Freeway will cross Elmwood Avenue in the vicinity of Roger Williams Avenue, and an interchange will probably be located at this crossing.

Rail Access: Although the main line of the New Haven Railroad is located only 350 feet from Study Area 7, the extension of a spur to the study area does not appear feasible. Between Narragansett Avenue and the railroad are several substantial industrial buildings that would probably block the extension of a rail spur.

Relationship to Adjoining Territory: Land directly across Narragansett Avenue is zoned M-1 and is in industrial use. The remaining land bordering the study area is zoned R-1 and R-2 and is nearly all in residential use.

Capital Improvements: The MASTER PLAN FOR PLAYGROUNDS AND PLAYFIELDS includes a playground site of $1\frac{1}{2}$ acres in the middle of Study Area 7.

Conclusion: Study Area 7 appears suitable as a site for light industrial use. However, since a portion of the area is to be developed as a playground, and since the rezoning of the area might stimulate development that would jeopardize the proposed playground, no rezoning for industrial use can be recommended at this time.

Area 8
27 acres

Boundaries: From Niantic Avenue, east along brook connecting Spectacle and Mashapaug Ponds to Mashapaug Pond; south along edge of Mashapaug Pond to point opposite Howe Street; east along Howe Street to Niantic Avenue; north along Niantic Avenue to brook connecting Spectacle and Mashapaug Ponds.

Land Use: Study Area 8 is included in Arrested District A-1, as delineated by the 1946 MASTER PLAN FOR REDEVELOPMENT OF RESIDENTIAL AREAS. Approximately 18 acres are vacant. The remaining 9 acres are occupied approximately as follows: 5 acres in platted streets, $3\frac{1}{2}$ acres in residential use, $\frac{1}{4}$ acre in commercial use, and $\frac{1}{4}$ acre in industrial use. Thirty-two single-family dwellings are located in the area. Generally, these appear to be well-maintained.

Streets: Study Area 8 contains 5,440 linear feet of platted streets. 3,520 feet are open but not paved; and 1,920 feet are not open to traffic. The prevailing right-of-way width is 40 feet.

Zoning: R-1

Physical Conditions: The highest elevations in the area are in the northern-most and southern-most quarters, where a plateau extends across the city line from Cranston, and along Niantic Avenue on the western boundary. The highest elevations are 25 feet above the lowest elevations which are along a brook on the northern boundary, along the edge of Mashapaug Pond on the eastern boundary, and in a marsh which lies in the south central part of the area. In a strip of land about 40 feet in width along the northern and eastern boundaries, the terrain slopes downward to the water at gradients in excess of 60 percent. Other gradients in the area range from 4 to 15 percent.

Property Ownership: Property is in 70 different ownerships.

Capital Improvements: The MASTER PLAN FOR THOROUGHFARES includes a proposed expressway following generally the alignment of Niantic Avenue. While the exact alignment and width have not yet been determined, it is conceivable that a strip of land 150 feet wide may be taken along the Providence side of Niantic Avenue.

Highway Access: Via Niantic Avenue, the southern-most part of Study Area 8 is approximately 600 feet from Reservoir Avenue, which carries State Routes 2 and 3.

Rail Access: The provision of rail access does not appear feasible.

Relationship to Adjoining Territory: Land immediately to the north, across the brook, is zoned R-3 and is pre-

dominantly vacant. To the east is Mashapaug Pond. Land immediately to the south is zoned R-1 and is partly vacant, partly in use as a cemetery, and partly commercial. Land to the west, in Cranston, is zoned for commercial use and is actually in mixed residential and commercial use.

Conclusions:

- A. The rezoning of Study Area 8 to permit industrial use would be likely to have detrimental effects upon the residences presently in the area.
- B. The existing pattern of property ownership and the great diversity of ownership within the area would probably dissuade any private developer from attempting to assemble and redevelop Study Area 8 for industry.
- C. The proper regrading of the area, the removal of residential structures, and the replatting of streets and property lines would be extremely difficult if not impossible without the assembly of land into a single ownership.
- D. The rezoning of the area at the present time would possibly encourage the building of structures in the path of the proposed Niantic Avenue Expressway.
- E. In view of the preceding conclusions, it cannot be recommended that Study Area 8 be rezoned for industrial use. As previously stated in this report, it is strongly felt that the proper use of the Mashapaug area is for residential occupancy through application of redevelopment procedures.

Area 9
14 acres

Boundaries: From Niantic Avenue, east along the rear lines of lots fronting on Pinckney and Day Streets to Mashapaug Pond; south along the edge of Mashapaug Pond to the brook connecting Mashapaug and Spectacle Ponds; west along the brook to Niantic Avenue; north along Niantic Avenue to a point 80 feet north of Pinckney Street.

Land Use: Study Area 9 is a part of Arrested District A-1. Approximately 7 acres are vacant; $5\frac{1}{4}$ acres are in open-type industrial use (storage of equipment and materials); 2 acres are in platted streets; and $\frac{1}{4}$ acre is in residential use.

Streets: Of the total of 2,400 linear feet of platted streets in Study Area 9, none are paved, only 450 feet are open, and 1,950 feet are not open. The prevailing right-of-way width is 40 feet.

Zoning: The entire area is zoned R-3.

Physical Conditions: For a distance of approximately 650 feet east of Niantic Avenue the terrain is at approximately the same elevation as Niantic Avenue. Approximately 650 feet east of Niantic Avenue, the terrain rises 5 to 10 feet to a plateau. Except along the shoreline, gradients on the plateau are not in excess of 2 percent. In a 50 to 100 foot strip along the shoreline the terrain drops 15 to 25 feet at gradients of $12\frac{1}{2}$ to 14 percent.

Property Ownership: Property in Study Area 9 is in 7 different ownerships. All except one-half acre is held in 2 ownerships.

Capital Improvements: The proposed expressway treatment of Niantic Avenue will possibly require the taking of property in Study Area 9. While the exact alignment and width have not yet been determined, it is conceivable that a strip of land 150 feet wide may be taken along the Providence side of Niantic Avenue.

Highway Access: Via Niantic Avenue, Study Area 9 is 2,960 feet from Reservoir Avenue, which carries State Routes 2 and 3.

Rail Access: There is no rail access at present. The study area is approximately 2,000 feet from the main line of the New Haven Railroad to the north and approximately the same distance from the Willimantic Branch to the west. Unless the area to the north were redeveloped for industry, a spur from the north would have to traverse a residential neighborhood or else follow the shoreline of Mashapaug Pond. A rail spur along the shore would despoil an area that has potentialities as a recreational development. A rail spur from the west would cross the route of the proposed Niantic Avenue Ex-

pressway, and probably would have to be separated from the expressway by an overpass or underpass.

Relationship to Adjoining Territory: All of the area within the City of Providence adjacent to Study Area 9 is zoned for residential use. On the Cranston side, zoning is for light industry. Residential use and the state-owned Mashapaug Reservation make up most of the land use on the northern boundary. Mashapaug Pond is on the eastern boundary. Land across the brook on the southern boundary is partly in residential use, partly vacant, and partly occupied by billboards. On the western boundary, in Cranston, the land is vacant.

Conclusions: Physically, Study Area 9 appears suitable for industrial development. However, since the area is included within a proposed redevelopment project area, since part of it might be needed for an expressway right-of-way, and since the erection of industrial buildings in the area might cause serious interference with these proposed capital improvements, no rezoning can be recommended at this time.

Area 10
12 acres

Boundaries: From a point even with Hamburg Avenue, east along the New Haven Railroad to a point 440 feet east of Dexter Street; south to Mashapaug Pond; west and south along edge of pond to Pleasant View Avenue; north along Pleasant View Avenue to Van Zandt Street; west along Van Zandt Street to the New Haven Railroad.

Land Use: Eight acres are vacant; one acre is in industrial use; and 2 acres are in platted streets. The entire industrial use is accounted for by a single factory.

Streets: Study Area 10 contains 2,260 linear feet of platted streets, of which 460 feet are paved. There are 640 feet of unpaved streets and 1,160 feet of platted but unopened streets. The prevailing right-of-way width is 40 feet.

Zoning: All of Study Area 10 is presently zoned R-3.

Physical Conditions: Study Area 10 contains approximately $4\frac{1}{2}$ acres of level terrain, 2 acres being in the northwest corner and $2\frac{1}{2}$ acres being in the northeast corner. The remaining $7\frac{1}{2}$ acres have a choppy topography. Gradients vary from 4 percent to 40 percent. The highest point in the area is approximately 30 feet above the elevation of Mashapaug Pond.

Property Ownership: Property in Study Area 10 is in 22 different ownerships.

Capital Improvements: Study Area 10 is included in Arrested District A-1.

Highway Access: Via Dexter Street, the study area is less than 200 feet from Huntington Avenue.

Rail Access: The main line of the New Haven Railroad runs along the north boundary of the area. The construction of a spur appears feasible.

Relationship to Adjoining Territory: A strip of vacant land approximately 60 feet wide adjoining the northeast corner of the area is zoned M-1. All other territory bordering the study area is zoned R-3. As previously noted, a railroad is on the northern boundary and a pond on the eastern boundary. To the south and west, land use is predominantly residential.

Conclusion: The development of additional industrial uses in Study Area 10 would probably be detrimental to adjoining residential uses. Therefore, it cannot be recommended that Study Area 10 be rezoned to permit industrial use.

Area 11
14 acres

Boundaries: From Huntington Avenue southeast on Wadsworth Street to Sorrento Street; southwest on Sorrento Street to Benedict Street; southeast on Benedict Street to the rear lines of lots facing Cranston Street; southwest along rear lines of lots to Anthony Avenue; northwest on Anthony Avenue to Huntington Avenue; north on Huntington Avenue to Wadsworth Street.

Land Use: Land use areas are approximately as follows: 5 acres vacant, 5 acres in industrial use, 2 acres in residential use, 1½ acres in streets, and ½ acre in commercial use. Most of the industrial use consists of junkyards along Huntington Avenue.

Zoning: A strip of land approximately 100 feet deep along Huntington Avenue is zoned C-4. Another strip approximately 100 feet deep located on the southeast side of Avon and extending from Anthony Avenue to Benedict Street is zoned C-2. The remainder of Study Area 11 is zoned R-3.

Capital Improvements: Two proposed major thoroughfare improvements will have important effects upon Study Area 11. One is the Huntington Avenue Expressway, which will take some of the property presently occupied by non-conforming junkyards. The other is the extension of Potters Avenue to Huntington Avenue. This will take land now occupied by a junkyard as well as land that is now vacant. The overall result of these two projects will be to make the area more desirable for residential use.

Conclusion: Because of two major thoroughfare projects proposed in the area, no recommendation for rezoning can be made at this time. Furthermore, once the two proposals have been carried out, it seems likely that the highest and best use of Study Area 11 will be residential.